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Soil and Water Conservation News

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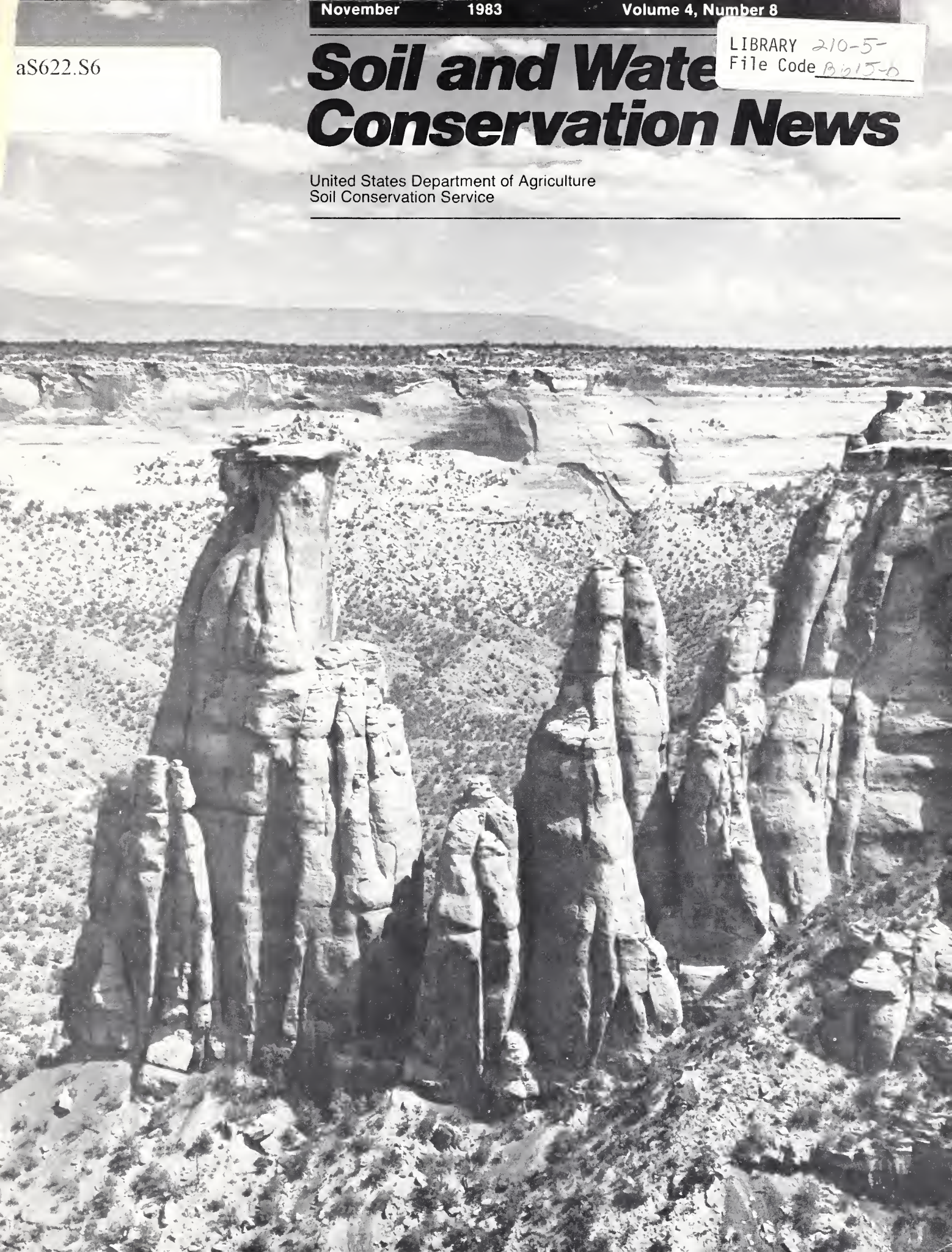

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Comments:
From the SCS Chief

Another Reason to Try Conservation Tillage

Next to controlling soil erosion, holding moisture for crops is one of the greatest benefits of conservation tillage, and especially no-till, in times of drought.

Researchers in many States are studying moisture retention in conservation tillage and no-till systems. Here's what they've learned:

- Crops under conservation tillage systems show signs of stress 5 to 10 days later than conventionally tilled crops. Delaying stress during pollination and critical growth stages could help yields;
- Crop residues delay evaporation of rainfall and let moisture soak in;
- During stress periods, there can be as much as 2 inches more soil water available for crops with conservation tillage and no-till than with conventional tillage;
- No-till on irrigated wheat can save as much water as it takes to irrigate the crop once with 4 inches of water;
- In dry years, crops under conservation tillage, and especially no-till, yield better than conventionally tilled crops.

This summer many farmers and ranchers endured a terrible drought. But reports I've received say that generally the crops that were under some form of conservation tillage were in better shape than those under conventional tillage.

We in the Soil Conservation Service, in cooperation with other USDA, State, and local agencies, must strengthen our efforts to convince farmers and ranchers to adopt some form of conservation tillage. It can make the bad times better and make the best of the good times.

Cover: Geologic erosion, Colorado National Monument near Grand Junction, Colo. (Photo by Tim McCabe, visual information specialist, Public Information, SCS, Washington, D.C.)

John R. Block
Secretary of Agriculture

Peter C. Myers, Chief
Soil Conservation Service

All programs of the U.S. Department of Agriculture are available to everyone without regard to race, creed, color, sex, age, or national origin.

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News Briefs

Drip Irrigation Conference To Be Held

A conference on drip irrigation in the eastern United States will be held at Hilton Head Island, S.C., December 11–13, 1983. The conference is a cooperative effort of State, regional, and national organizations including the Southern Natural Resources Council and the National Association of Conservation Districts.

The participants will examine research activities, industry trends, and farmer experience in drip irrigation.

For additional information, contact Richard Dodd, Conference Coordinator, South Carolina Land Resources Commission, 2221 Devine Street, Suite 222, Columbia, S.C. 29205. Telephone (803) 758-2823.

Special Magazine Issue on Conservation Tillage Published by Soil Conservation Society

The Soil Conservation Society of America (SCSA) has published a special conservation tillage issue of its *Journal of Soil and Water Conservation.*

The 192-page issue includes articles that assess the positive and negative impacts of conservation tillage on soil and water resources, energy use, and environmental quality. Other articles look at the applicability of conservation tillage from a regional point of view or from the perspective of certain crops. There are also articles on efforts being used to gain acceptance of conservation tillage, farmer experiences with various conservation tillage systems, and current research in conservation tillage.

Single copies of the issue are available for $5 from SCSA, 7515 N.E. Ankeny Road, Ankeny, Iowa 50021.

RCA Symposium Executive Summary Available

The U.S. Department of Agriculture and the Center for Agricultural and Rural Development of Iowa State University, Ames, Iowa, have published an executive summary of the proceedings for the RCA Symposium: Future Agricultural Technology and Resource Conservation. The symposium, held in December 1982, brought together more than 200 of the Nation's leading farmers, scientists, agricultural business people, extension workers, and other specialists. They were to combine their technical skills and expertise to project what might be the state of America's agriculture in the years 2000 and 2030.

The publication summarizes the findings from the symposium's nine work groups: soil management technology, tillage, and crop rotation practices; land use; water resource technology and management; adoption and diffusion of soil and water conservation practices; crop technology; crop nutrition technology; pest management technology; machinery technology; and red meat, dairy, poultry, and fish technology.

Lists of work group participants, keynote speakers, and conference moderators are also included.

Single copies of the executive summary for the RCA Symposium: Future Agricultural Technology and Resource Conservation are available free from the Center for Agricultural and Rural Development, 578 Heady Hall, Iowa State University, Ames, Iowa 50011.

Forest Service Establishes Plant-a-Tree Program

An opportunity for people to make donations to finance planting trees on the National Forests was recently announced by Secretary of Agriculture John R. Block.

In response to numerous public requests, Block said, USDA's Forest Service has established the plant-a-tree program to give individuals and groups an opportunity to help improve the Nation's forests.

Contributions may be made by groups and individuals in their own names or in honor of others.

For a minimum $10 donation, contributors will receive a certificate acknowledging their gifts. Individual trees will not be marked to recognize contributors but probably will be planted on the national forest nearest the honoree's home.

Based on current needs, the Forest Service will select the species and sites to be planted. The number of plantings that will result from an individual donation will vary due to differences in costs in various parts of the country.

Donations to the plant-a-tree program will be accepted at all Forest Service offices. The donations are tax deductible.

Endowment's First Award Will Buy Seeder for Tall Grass Prairie

The National Endowment for Soil and Water Conservation celebrated its first anniversary by promising to buy a pasture seeder to help a Kansas county reverse a century-old plowout of fragile grasslands.

There are 25,000 acres of abandoned cropland in Chase County, in the midst of the historic Flint Hills grassland area of eastern Kansas. This critically eroding land, now used as rangeland again, has never been seeded back to the native vegetation it needs to protect its thin layer of topsoil and provide quality forage for cattle.

For many years, ranchers had rented a seeder from the Chase County Conservation District (CD) to reseed the land.

But the seeder began to fail more than 4 years ago and the Chase County CD has not been able to afford a replacement.

The National Endowment for Soil and Water Conservation chose the Chase County CD's request for a seeder as their first award and the Chicago Board of Trade agreed to pay the bill.

Soil Conservation Service District Conservationist Lyle Kohlmeier estimates ranchers will use the new seeder to plant 600 to 800 acres per year, with a grass mixture that will match the native vegetation as closely as possible. Kohlmeier says this will save an average 2.8 tons of topsoil per acre per year.

In its application, the Chase County CD offered to repay the grant a little at a time by returning $1 per acre from the rents charged to those who borrow the seeder. The Flint Hills Resource Conservation and Development (RC&D) Council helped the conservation district with the proposal.

Now the Endowment is raising money for other similarly inexpensive projects that will apply needed soil and water conservation practices. For more information or to send contributions, write to the National Endowment for Soil and Water Conservation, 318 Fourth Street, N.E., Washington, D.C. 20002, or phone (202) 546-7407.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

Keep America Beautiful Celebrates 30 Years of Public Service

Keep America Beautiful, Inc. (KAB) will celebrate three decades of public service at its 30th Anniversary Meeting, December 7-9, 1983, in Washington, D.C. Since its inception in 1953, KAB has worked to improve the quality of American life by promoting proper handling of solid waste.

KAB's principal program, the Clean Community System (CCS), is now underway in more than 300 communities in 39 States, and its behavior-based principles have been adapted in six other countries. According to KAB President Roger W. Powers, CCS recognizes that people's attitudes are the cause of litter and improving those attitudes has resulted in documented, sustained litter reduction of up to 80 percent in many CCS cities and counties.

KAB has recently expanded into the recycling field as well, with the publication of its "CCS Multi-Material Recycling Manual." The 101-page, loose-leaf program manual calls for cooperation between citizen groups (which can encourage individual involvement to increase the volume of recyclables), government (which can facilitate collection of recyclables), and industry (which actually processes the reclaimed material). The manual is available from KAB for $25 plus $2 postage and handling.

For more information on KAB and its 30th anniversary meeting, write: KAB, 99 Park Avenue, New York, N.Y. 10016.

Trends in Technical Help

This Administration understands and supports the need for soil and water conservation programs. We are working to make them more effective in their performance and ever more respected by the Congress and the public.

Unless these programs operate on the basis of the best analytical knowledge of resource problems; make hard choices as to priorities; and produce steadily increasing gains in the battle against erosion, we cannot expect Congress and the public to support them generously and indefinitely.

Some of the Soil and Water Resources Conservation Act (RCA) studies, analyses of National Resources Inventory (NRI) data, and reports of the General Accounting Office told us, for example, that shifts were needed in the way we provide funding for Soil Conservation Service technical assistance to the States.

We selected 12 factors as indicators of resource conditions and needs in each State, representing most major Conservation Technical Assistance activities. Four of the factors relate easily to the historical base of the old allowance system, to help provide a smoother transition to the new one. We assigned a weight to each factor to reflect current national RCA objectives as well as the average time SCS spends on aiding these problem areas.

The system provides a more rational and factual basis for making base allowances for technical assistance. It establishes a general trend line on which future program actions can be based. It simply is good money management, when we are trying to manage a national program prudently based on three main priorities.

The new formula is not perfect or locked in concrete: We used it to provide the FY 1983 allowances, but we are fully implementing the system over 10 years. We want to make any shifts—especially downward ones—gradual and smooth; and we want to refine the system further, based on new NRI or other resource data and on experience with it.

There are opportunities for a State to minimize any impact of the allowance formula and get more conservation done. For example:

—Targeting, which is over and above the annual base allowance;

—Land treatment watershed projects, where PL-566 funds are used to promote conservation work on the land; and

—Increased State and local involvement and initiative.

We can promote good soil and water conservation in more places and carry on the work that started nearly 50 years ago, if we work with each other.

Richard D. Siegel,
Deputy Assistant Secretary for Natural Resources and Environment, U.S. Department of Agriculture, Washington, D.C. (From a talk at the Northeast Regional Meeting of the National Association of Conservation Districts, August 11, 1983.)

Saving Energy in a Box

"It's essentially a box, a 50- by 60-foot box!" says Soil Conservation Service District Conservationist Richard Haldeman of the energy-saving building that houses U.S. Department of Agriculture agencies in Coos County, N.H.

Haldeman's concise description of the solar and wood-heated office is a salute to the energy-efficient structure custom planned and built by Robert Kidder, a Lancaster, N.H., contractor.

Kidder's building, constructed late in 1980, is composed of readily available materials, but not the routine sizes, grades, etc., normally used. Six-inch studded walls are chocked with insulation; an inch of foam insulation seals this on the outside. An inch of dead air space covers the foam and is sealed in by wind-resistant brick veneer.

Internally, the walls are composed of 3/8-inch backer sheetrock and 3/8-inch vinyl-coated sheetrock. Windows are triple-paned. There is no wiring in the outside walls; electricity is provided by base plugs in the floor, working from a junction box in the basement.

The roof itself is a solar collector and costs about half the price of a conventional collector, builder Kidder estimates. Facing 3° west of south, the building exposes half its roof surface to northern New Hampshire's low-rising winter sun. The outer surface is corrugated asphalt, which absorbs and conducts the sun's heat inside, trapping it in a reflective insulated panel.

Tucked between the roof, which weighs only half of a conventional roof, and the office ceiling, is an insulation cap with a heat-retention factor (R-factor) of 50.

The building keeps comfortably warm on 4 to 4½ cords of wood in a year. Haldeman estimates he uses 5 to 6 cords of wood, with supplementary electric heat, to heat his 3-bedroom home, an area about one-third the size of the Kidder building. Cut and ready to burn, 4 cords would cost about $400 in the Lancaster area; oil would have cost $600 each season. Natural gas is unavailable in the State. The actual cost was even less since Kidder was able to cut and clean up his own woodlot, mixing in so-called trash wood for a good, burnable mixture.

The furnace, a European import, burns steadily. The chimney, which is insulated to within an inch and a half from the top, resists creosote.

Only once has the fire gone completely out, during a severe cold snap at Christmas 1980. Despite the outdoor temperature at -50° F and a windchill factor even lower, the offices held at about 50° F. Staffers agree the building holds a comfortable work temperature, winter and summer.

In spite of the traffic of visitors to the SCS, Coos County Conservation District, Agricultural Stabilization and Conservation Service, and Farmers Home Administration offices, the building suffers little heat loss. Haldeman estimates only 2 percent of the air is exchanged in the course of a day, as opposed to an average of 20 or 30 percent change in a home.

The box-like form of the building enables the owner to design office space to suit his tenants. Each agency has floor space, office walls, electrical outlets, and storage to suit its needs. Internal walls are all free of structural support requirements. They can be torn out or moved around readily.

Kidder has adapted the basic ideas in his office building to his own home and to two apartment buildings. He has contracted out to build a similar project for a paper mill in the area. And, he continues to work on improvements for the domestic furnace heating system.

Dottie Laber,
public affairs specialist, SCS, Durham, N.H.

At left, the building that houses Coos County, N.H., agricultural agencies was designed to save energy.
At right, Robert Kidder (left), a member of the North Country Resource Conservation and Development Executive Council who designed and built the building, discusses the plans with SCS District Conservationist Richard Haldeman.

Photos by Karen Rusinski, visual information specialist, SCS, Syracuse, N.Y.

Management Tips

Readers are invited to submit "Management Tips" to the editor, *Soil and Water Conservation News*, Soil Conservation Service, P O Box 2890, Washington, D.C. 20013

Freeze-Proof Stock Tanks

One of the more vexing problems that ranchers and livestock farmers in the colder regions of the United States face in the winter is that of livestock water supplies that freeze. Kansas Flint Hills ranchers, who run cow herds on rangeland through the winter, now have a solution to this problem, other than breaking the ice every day.

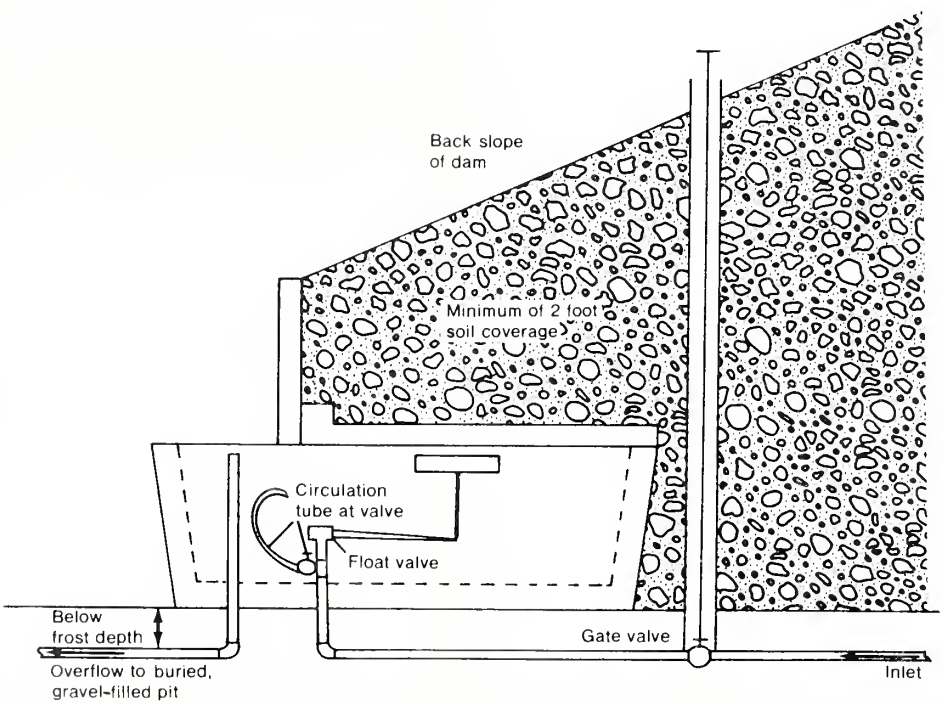
Steve Ekblad, Soil Conservation Service range conservationist at Emporia, and Jesse Crockford, SCS district conservationist at Council Grove, offer a promising alternative for ranchers to consider when planning a new stockwater pond or modifying an existing one.

This alternative is a freeze-proof tank partially buried in the backslope of the pond embankment. A freeze-proof tank will provide running water in all but the most extreme cases of sub-zero weather, says Crockford. The water is kept from freezing by the combination of special design, partial burial of the tank, and continuous flow of water.

To deliver water to the tank, a plastic pipeline 1½-inches in diameter is placed through the dam at the time of construction. A 2-foot minimum of soil is placed on and around the tank to insulate it. Water from the pond runs through the tank and, in winter, discharges through an overflow pipe into a pit filled with gravel or large crushed stone. A float valve in the tank controls the water level. In winter continuous flow is maintained by opening a circulation valve.

The benefits of a freeze-proof tank far outweigh its initial costs, Crockford advises. By having the watering facility below the dam, livestock can be excluded from the water source by fencing. Fencing the dam and permanent pool will improve the water quality. Fencing eliminates damage or pollution by livestock and provides the protection needed to establish and maintain a good plant cover. The fenced out area also provides an area of ungrazed vegetation around the pond that can be used by wildlife.

Fred Trump,
public affairs specialist, SCS, Salina, Kans



Conservation District Recycles Living Christmas Trees

The Ramona-Julian Resource Conservation District is asking people in the San Diego, Calif., area to donate their living Christmas trees. After Christmas, the conservation district suggests that people donate the trees to them, to local Scout troops, or to the San Diego Wild Animal Park for replanting.

This is the second year the conservation district has accepted tree donations. Last year, the California Conservation Corps planted the donated trees, along with trees given by local nurseries, in Ramona's park and fairgrounds area. Soil Conservation Service personnel helped determine the best locations for windbreaks, beautification, and shade.

The conservation district promoted the program in local newspapers and magazines, as well as on an early Sunday morning television talk show. Jason Jackson, an SCS soil conservationist in Ramona, represented the conservation district on the show. District directors also put posters and handouts in local tree nurseries. This year they hope to attract more donors by starting their publicity drive earlier and by expanding it, perhaps to prime-time television.

The tree donations are tax deductible. For more information, contact the Ramona-Julian Resource Conservation District, 1735 Main Street, Suite C, Ramona, Calif. 92065.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

Not From the Horse's Mouth

In a current issue of "The Chronicle of the Horse"—a major, nationwide publication for horse owners, stable operators, and breeders—the Soil Conservation Service and soil and water conservation districts (SWCD) get first recommendation as the places horse owners can turn to for help with land and manure management.

In his article in the publication, Karl Decker, a supervisor with the Fairfield County Soil and Water Conservation District in Connecticut, describes the environmental impacts of erosion on horse sites and nutrient pollution caused by unmanaged manure.

"In virtually all parts of the United States," Decker writes, "the horse owner with manure or erosion problems can get the services of USDA's Soil Conservation Service through the soil and water conservation district office." The article, additionally, describes erosion problems peculiar to horse sites and gives some practical suggestions for home remedy erosion and sediment control.

The Fairfield County SWCD has a land and manure management program and publication for horse owners which were instituted in response to horse wastes and site erosion inquiries conducted by the SWCD for the past 2 years.

For further information, contact the Fairfield County Soil and Water Conservation District, Route 6, Bethel, Conn. 06801.

Mary Obre,
district secretary, Fairfield County Soil and Water Conservation District, Bethel, Conn.

Handbook Attacks Erosion in the Sierra Foothills

When last calculated in 1975, the Sierra foothill counties of Placer, El Dorado, Nevada, and Sierra in California were growing five times faster than the rest of the State. That growth continues as builders, developers, and public officials strive to accommodate the needs of new residents with homes, roads, and shopping centers.

The area's fragile soils are anchored by a thin ground cover, and new construction has left unprotected hillsides that tend to wash away with the area's intense rainfall. This has resulted in plugged culverts, eroding ditches, damaged roads, muddied reservoirs, and flooding. Every stream that drains off the western Sierra slopes carries with it tons of polluting sediment into the central valley watershed. It's an erosion problem not unlike other parts of the country. What is different is that Bob Roan has developed a handbook that is helping solve the problem.

Roan is the USDA coordinator of the 3.1-million-acre, four-county High Sierra Resource Conservation and Development (RC&D) area. Early in 1982, the RC&D Council obtained a $25,000 Federal grant to assemble a handbook for erosion control. The 270-page handbook, "Erosion and Sediment Control Guidelines for Developing Areas of the Sierra," has been completed and more than 700 copies have been distributed to local governments, private contractors, and developers.

Evidence of its usefulness is starting to emerge. Mike Smith, a Placer County engineer, says he consults the handbook when designing a drainage system to suit a construction site. "Sometimes it provides alternatives that we overlook," he said.

In El Dorado County, officials have placed copies of the handbook in library branches and ask people who request grading permits to use it as a reference guide.

In discussing the value of the handbook, Bob Roan says, "When you start building a house, there are standards and specifications for everything you do. The electrical work, plumbing, you name it—everything has a standard and spec. You end up with a house, and everyone is happy—until the ground you built it on begins to wash away. Now we have guidelines for erosion control."

John F. Plain,
public affairs specialist, SCS, Davis, Calif

While You Were Out

The Soil Conservation Service in Virginia has developed an information tool to help in their efforts to reach farmers in the Piedmont Bright Leaf Erosion Control Area. Specialists are making onfarm visits to let farmers know about erosion problems in the area and what can be done to control them. If the farmer is not at home, the specialist leaves a preprinted message with the Piedmont Bright Leaf Erosion Control Area logo.

The message reads: "Sorry I missed you! I stopped by today as a representative of the local soil and water conservation district. I want to talk to you about new efforts being made to reduce cropland erosion. Since your farm is located in the Piedmont Bright Leaf Erosion Control Area, you have many new opportunities and services available.

"If you're interested in reducing soil erosion and water pollution, increasing soil productivity, or improving your farm income, call me so we can arrange to discuss a conservation program and benefits designed especially for you."

There is room at the bottom of the note for the specialist's name and telephone number.

Helen Jeter,
public affairs specialist, SCS, Richmond, Va.

RC&D Helps Grass Growers Clip Water Use

Enough water to supply the annual needs of a quarter of a million people may be saved through the efforts of the Hohokam Resource Conservation and Development area (RC&D). The RC&D Area Council developed and published a handbook designed as a simple, straightforward guide to help urban water users in the metropolitan area of Phoenix, Ariz., to improve their irrigation management on large parcels of turf.

A significant amount of water is used to irrigate turf lawns in the Phoenix area's parks, schools, golf courses, and other settings. The State's Department of Water Resources estimates that around 50,000 acres of irrigated lawns in the Salt River Valley, where the metro area is situated, may receive as much as 300,000 acre-feet of irrigation water each year.

The RC&D Council saw the need for a coordinated and concerted effort to address irrigation water management in the urban setting. Arizona's new ground water law will eventually require reductions in the amount of ground water used, and previous years have seen severe droughts which have limited stored water supplies, making water conservation efforts even more imperative.

Many of the "urban irrigators" didn't have the resources to evaluate their current irrigation management. For the most part, they didn't have the technology to make needed changes.

The technical guide developed by the RC&D Council focuses on bermudagrass, the principal plant used for turf planting in the area. It is called "A Handbook of Irrigation Water Management for Urban Water Users," and was developed and printed using local donations of time and money.

The Council sponsored three workshops throughout the area to introduce the handbook and explain its uses. About 150 turf managers from some 50 organizations attended the workshops. The participants were a broad cross section of water users, including all major cities in the area, many school districts, golf courses, and others.

The techniques outlined in the handbook can result in reductions of 10 to 20 percent or more in water use for most irrigators. This could result in savings of as much as $8 million annually at projected water costs in much of the municipal area. Other savings will result from better use of labor, reduced maintenance costs, and improved design of future facilities.

The ultimate benefit will be to the hundreds of thousands of people who use the area's irrigated open spaces.

For further information, contact Bart Ambrose, RC&D Coordinator, Hohokam Resource Conservation & Development Office, 110 N. Oregon, Chandler, Ariz. 85224.

Smith Covey, SCS district conservationist at Phoenix, Ariz., collects information to evaluate park irrigation.

Help for Home Buyers and Builders

A new publication is on the bookshelf. Entitled "Sixty Questions for Homebuyers and Homebuilders," it will never make the best seller list but should be of help to home buyers and builders in Ottawa County, Ohio.

The free 16-page brochure was sponsored, developed, and published by the Ottawa Soil and Water Conservation District with support from the Ottawa County Commissioners and in cooperation with other county offices and agencies: Building Inspector, Cooperative Extension Service, County Engineer, County Health Department, Ottawa Regional Planning Commission, Soil Conservation Service, County Schools System, Port Clinton City Schools, and Township Trustees.

The purpose of the brochure is to assist prospective home buyers and homebuilders by providing a list of procedures to follow and items to consider when evaluating a lot or building site or selecting land for development. The brochure is divided into six sections: soil; water supply; sewage system; regulations, legal requirements, local assessments; community features; and natural features and drainage characteristics.

Included in each of the sections are individual "Items to Consider" and a "Contact" source. Sample questions are:

- During excavation, will topsoil be stockpiled for future use for lawns and final grading?
- Are there any local restrictions for installation of ponds?
- Is detailed sketch or map available showing location of septic tank and leaching field? Sewer lines?
- Have you checked specifications for any needed drive culverts?
- Is there a snow removal program?
- Is property located in floodway/flood plain?

The brochure includes a directory of county offices, county agricultural offices, and county school systems, along with their phone numbers and office hours. It also lists publications pertain-

ing to homebuilding which are available through the Cooperative Extension Service, Ohio Department of Health, Ohio Department of Natural Resources, and Soil Conservation Service.

Funding for the printing of the publication was made possible by donations. Copies of the brochure will be available from neighborhood banks, realtors' offices, Welcome Wagon, Chamber of Commerce, and any supporting agency office.

Elva Herbert,
district clerk, Ottawa Soil and Water Conservation District, SCS, Oak Harbor, Ohio

Use a Tabloid to Spread the Conservation Message

The Information and Education Committee of the Double Pipe Creek Rural Clean Water Program in Carroll County, Md., recently published a tabloid about soil conservation and water quality issues. Local and State agency officials were enlisted to write the articles and were given a byline as a way to attract farmers' attention.

Spearheaded by Soil Conservation Service Soil Conservationist Randy Bachtel of Westminster, Md., the newspaper will be distributed to farmers on the Extension Service mailing list and handed out at fairs, farm supply stores, meetings, and agency offices. The local newspaper economically typeset and printed the paper.

It is an excellent example of what conservation districts, resource conservation and development councils, and other conservation groups can do to spread the conservation message. Bachtel said that the newspaper has received such good comments that another one is already being planned for next summer.

Katherine C. Gugulis,
public affairs specialist, SCS, College Park, Md.

Alternative Sentencing Provides Assistance to Conservation District

The Granville Soil and Water Conservation District (SWCD), Granville County, N.C., is benefiting from an alternative sentencing program being experimented with by North Carolina courts. Under this system, a defendent is placed on probation and is required to perform some kind of public service.

Currently, the Granville SWCD is using the services of a forester who was found guilty of malfeasance of a corporate agent and placed on probation for 5 years. During his probation he is required to serve 2 days each month with the district.

The district supervisors decided to use the forester's services to develop and implement a forest management education program and to provide direct forest management assistance to district cooperators who requested the service. This program, before being approved by the court, was reviewed by the attorneys for the defendant and for the State of North Carolina.

As a result of the program, the forester has assisted 50 district cooperators with some phase of forest management on their farms. The information/education program has been coordinated with that of the Granville County Interagency Committee on Small Woodlots. So far, numerous forest management news articles have been published and a slide set on forest management in Granville County has been developed.

Boyce L. Harvey,
district conservationist, SCS, Oxford, N.C.

Conservation District Puts a Computer to Work

The Iosco Soil Conservation District, Iosco County, Mich., has been conducting conservation programs with the help of a small business computer system. The computer is portable with battery pack which may be taken outside the office. The conservation district has a printer and a 12-inch monitor for word processing chores such as composing letters, newsletters, annual reports, and other written materials.

They have a tree program stored in the computer which allows them, at any time and with the touch of a few keys, to know how many trees have been sold, which species, the number of trees remaining, and other details. The computer will also print order cards, mailing labels, compute and print the order blank, and sort according to zip code or whatever order may be chosen.

Names and addresses of individuals with which the district does business, board meetings minutes, newsletters, and annual reports are all stored in the computer's memory. The word processor allows for the composing and photo readiness of items to be printed.

As a demonstration of the computer's effectiveness, the district sent more than 150 "personal" letters to landowners. Each letter was individualized with the landowner's name. As a result, the district received more than 60 confirmed onsite appointments for their technical staff. The district is working on a program that will put all cooperator information on a computer file and on a telephone hookup with the Michigan State University computer system.

For more information on their computer system, contact the Iosco Soil Conservation District, Room 116, Federal Building, East Tawas, Mich. 48730.

CONSERVATION Research Roundup

Should Bottomland Forests Be Shifted To Row Crops?

The temptation is to convert bottomland forests into agricultural land, says Sandra Brown, assistant professor of forestry at the University of Illinois (U of I). But she says that the result of making such a conversion often is the loss of important benefits and the addition of headaches.

"Sooner or later, many farmers run into problems with flooding, harvesting, and soil erosion on bottomland," she says. "Crop loss is a stiff enough price to pay, but the problems don't end there. When bottomland forests are removed, wildlife, water quality, and other valuable resources often suffer."

Fish thrive in streams bordered by bottomland forests because trees are a rich source of organic food, Brown points out. For example, the U of I Department of Forestry determined in one study that each acre of bottomland forest annually produces an average of 2 tons of fallen leaves and other small debris, which forms the basis of the food chain in rivers and streams.

During the winter, Brown says that microorganisms decompose this organic matter under the snow, enriching its nitrogen content. Then, during spring flooding, the material is washed into the river, providing a critical source of food.

In addition, the debris that trees deposit along streams is used by fish for protection and habitat; and the shade helps minimize fluctuations in water temperature.

During high water, bottomland forests serve as spawning grounds and nursery areas, she adds. In fact, spawning for many species of fish coincides with flooding.

Another benefit is that bottomland forests serve as traps for sediment, nutrients, and chemicals from adjoining streams and rivers. When a river floods its banks and submerges the surrounding forest, it disposes of pollutants by depositing sediment and chemicals.

According to Brown, U of I researchers have measured the rate at which sediment and nutrients have been deposited in bottomland forests along the Sangamon River. After 1 year of study, they found that 17 tons of sediment was deposited on each acre of the forest floor during the spring flood.

She points out that this is about 1½ times greater than the average erosion rate from the most highly erodible croplands in Illinois. Without the bottomland forests to capture this sediment, much of it would have remained in the stream.

Along with the sediment, researchers measured that the river deposited 90 pounds of nitrogen, 11 pounds of phosphorus, and a total of 114 pounds of calcium, potassium, and magnesium per acre of bottomland.

The benefits do not end there, Brown continues. Vegetation along a waterway stabilizes the streambank and prevents streambank erosion. When flowing water erodes portions of the streambank, large loads of sediment can clog a river channel and form hazardous sandbars.

"Also, a bottomland forest is a natural and effective means of flood control," Brown says. "When the river floods its banks in the spring, the bottomland forest absorbs the water. This not only reduces flooding downstream, but it also stabilizes the river flow."

Without bottomland forests, river communities run more risk of severe flooding. And the results? More money must be pumped into the construction and maintenance of flood control structures.

To top off all of these benefits, Brown explains that bottomland forests can provide an economic return from the raw material for wood products, and woody biomass may eventually become a viable energy source. She says that bottomland growing conditions are ideal for important timber species such as walnut, pin oak, sycamore, cottonwood, and silver maple.

Once a decision is made to keep bottomland forested, the question becomes one of proper management, Brown says. Therefore, U of I research teams also are exploring the best ways to manage different species in the bottomland environment.

Other projects include a study of the growth rate of bottomland species in relation to the frequency and duration of flooding, as well as a comparison of the amount of sediment, nutrients, and organic materials that are deposited on forested and agricultural bottomlands.

"We still don't know much about the potential advantages and disadvantages of converting bottomland forests to agriculture," Brown says. "However, our work to date suggests that the best management alternative for these lands is to leave them forested."

She says that the short-term profits gained by converting this land to row crops conflict with the long-term interests of the State, which must bear the cost of losing the "free" services provided by forests.

Nitrogen Recovery Higher With No-Till

Research results recently released by the University of Nebraska are answering some questions about nitrogen in a no-till system compared to a conventional cropping system.

Agronomists for the university found that no-till increased the amount of soil nitrogen in a wheat-fallow rotation by four to six times over a conventional plow-mulch type operation. The 11-year study showed that reduced soil disturbance from no-till produced more nitrogen residual due to higher nitrogen fixation by microorganisms found in the soil.

Experiments conducted in 1981, which used native sod as a benchmark to represent 100 percent, showed that no-till lost 3 percent of soil nitrogen compared to 9 percent for a stubble mulch system and 17 percent for a conventional plow-till system.

New Publications

Weed Control Methods for Recreation Facilities Management

Edited by Edward O. Gangstad

The stated purpose of this book is to survey and assess the management problems of aquatic plants and to present case problems from the field in which the technical data, published literature, and the operations mechanics are given in sufficient detail to provide a format for practical analysis and application.

The book is divided into four parts: (1) Special studies for management of recreation waters; (2) special studies in small scale recreation water areas; (3) special studies in large scale recreation water areas; and (4) research and development studies for control of Eurasian watermilfoil.

In addition to the special emphasis givn to measures of control of Eurasian watermilfoil, the book discusses duckweed, water hyacinth, alligator weed, and many other plants.

Some of the methods of control presented are biological, mechanical, and chemical control; herbivorous fish; dredging; and winter drawdown.

Copies are available for $84.50 from CRC Press, Inc., 2000 N.W. 24th Street, Boca Raton, Fla. 33431.

Turf Management Handbook

by Howard B. Sprague

A practical guide to turf culture, this handbook explains the life processes involved and describes the specific grasses, materials, equipment, and procedures that have been found to produce desirable results with a minimum of effort and expense.

The book's illustrations identify characteristics of individual grasses, weeds, insect pests, and diseases. Information on pesticides (including insecticides, fungicides, and herbicides) recommended as being effective, and acceptable by the U.S. Environmental Protection Agency, has been updated for this third edition.

The handbook includes improved strains and varieties of turf for cooler and warmer regions. The machinery and equipment for turf establishment and maintenance have also been updated by more than 50 new photos. A wide range of equipment is pictured, with comments on its use.

The final chapter suggests a seasonal schedule of turf management procedures that can produce strong, healthy turf by effective timing of practices rather than by belated and often frantic efforts to correct damage that has already occurred.

This is a ready guide to the management practices suited to the various climatic zones of the country, including adapted grasses, fertilization, pest control, watering, mowing, and renovation practices. The book not only gives specific information, but also explains why the selected practices are sound, thus giving the reader a basis for dealing with unique problems that arise.

The book is available from The Interstate Printers and Publishers, P.O. Box 594, Danville, Ill. 61832, for $17.25.

Public Relations and Communications for Natural Resource Managers

by James R. Fazio
and Douglas L. Gilbert

How can $19.95 buy someone a $500 conservation communication scholarship?

Fazio, professor and head of the Department of Wildland Recreation Management at the University of Idaho, has donated the royalties from this book to an endowment fund to encourage forestry, wildlife, and range science students at his university to be good communicators.

He also did this to honor the co-author, who died before this book was published. Gilbert was head of the Department of Fishery and Wildlife Biology at Colorado State University and spent most of his career trying to improve communications skills among natural resource managers.

In Chapters 3 and 5, the authors discuss the principles and tools of public relations. They discuss communication techniques in Chapters 6 through 9, including information on how to communicate directly to people, and indirectly through the media, exhibits, and photography. The authors briefly tell readers how to write news stories, feature stories, press releases, and scripts for radio and television.

In Chapter 11, they introduce readers to State, local, and Federal Governments, including information on how a bill becomes law at the Federal level. In Chapter 12, they describe the role of an information officer at the scene of emergencies, such as wildfires. The final chapter looks at the future of public relations, with suggestions on training. This chapter has a list of professional societies and publications for those interested in improving their public relations skills.

The book is available for $19.95, prepaid, from Kendall/Hunt Publishing Co., 2460 Kerper Blvd., Dubuque, Iowa 52001. Or call (319) 588-1451 for orders charged to credit cards.

Boom Sprayers

by the Northeast Agricultural Engineering Service

Proper selection, use, and maintenance of boom sprayers are important for effective, safe application of chemicals to farm crops. This publication helps farm managers and sprayer operators to determine the best type of equipment for the purpose.

This 24-page illustrated guide lists advantages and disadvantages of the general types of boom sprayers available, including various tank, pump, boom, and nozzle configurations used for different types of crops and spray materials.

Copies of this publication (NRAE-19) are available for $2 each from the Cornell Distribution Center, 7 Research Park, Ithaca, N.Y. 14850.

The Politics of Agricultural Research

by Don F. Hadwiger

It may not seem possible that Barry Commoner and agribusiness agree on anything, but Don Hadwiger says they do.

Actually Hadwiger is arguing for a new research agenda which will balance goals of public citizens such as Commoner with those of industry interest groups, returning to the consensus promised by the 1977 Food and Agriculture Act's research mandates.

Hadwiger is a professor of political science at Iowa State University and the author of other books on agricultural policy. In Chapter 2, he describes the shaping of State and Federal research institutions, including the struggle between State and Federal interests over funds and control.

In Chapters 3 through 8, he discusses the principal players in the drama of research decisions, which he portrays as complicated by a "confusing new political environment," caused by a broadening in participants. These players begin with the researchers whom the author describes, including where they work, how they work, how they are trained, why they work, and how they are changing.

The other major players are research administrators, industry groups, the congressional appropriations subcommittees for agriculture, and a coalition of public interest groups. The author sees the history of agricultural research policy since the publication of "Silent Spring" as a confrontation between industry and non-industry interest groups. The industry groups favor applied, producer-oriented research, while the others favor basic, consumer-oriented research, such as studies on human nutrition and the possible hazards of pesticides.

This book is available for $17.95 prepaid, from University of Nebraska Press, 318 Nebraska Hall, Lincoln, Nebr. 68588. Or call (402) 472-3581 to charge orders to credit cards.

New Publications

The Soul of Soil: A Guide to Ecological Soil Management

by Grace Gershuny

The author of this publication is an organic farmer in Vermont. She undertook the 60-page handbook on organic or ecological soil management to help other organic farmers work the soil without pesticides or herbicides and still earn a living.

The publication was printed with the support of the Extension Service of the University of Vermont.

Copies are available for $5 from Publications, Morrill Hall, University of Vermont, Burlington, Vt. 05405. (Order BR 1340.)

Soil Conservation and American Agriculture

by the Associates of the National Agricultural Library, Inc.

This special issue of the *Journal of NAL Associates* brings together interesting and informative papers, written by Soil Conservation Service specialists, on the importance of soil conservation to agriculture. Topics include: conservation tillage methods, range conservation, plants used in conservation work, structural measures for erosion control, and current soil and water conservation problems.

Copies of this issue (new series vol. 7, No. 1/4) are available for $5 from NAL Associates, Inc., 1301 Baltimore Blvd., Beltsville, Md. 20705.

National Directory of Farmland Protection Organizations

by Nancy Bushwick and Hal D. Hiemstra

This 87-page directory identifies 133 national, State, and local organizations involved in a variety of farmland protection activities. A narrative on each organization identifies a contact person; describes the organization's history, purpose, activities, and identifies the financial support of the group.

The directory is available for $4.50 from the National Association of State Departments of Agriculture Research Foundation, 1616 H Street, N.W., Washington, D.C. 20006.

The Appraisal of Rural Property

by the American Institute of Real Estate Appraisers

In an effort to enhance the educational process of present appraisers as well as strengthen the future of the appraisal profession, this book introduces readers to rural appraisal and appraisal techniques as they might be applied to agricultural properties.

This book presents the basic appraisal process as applied to agricultural and other rural properties. It reflects an appreciation for the rural appraiser's art and skills in estimating the results of many economic trends in a specialized situation.

Copies of this book are available for $28.50 each from American Institute of Real Estate Appraisers, 430 N. Michigan Avenue, Chicago, Ill. 60611.

The Private Forest-Land Owners of the United States

by USDA's Forest Service

The information in this publication is based on data collected for a 1978 landownership survey conducted by the Economic Research Service. It gives current estimates of the number and characteristics of the private forest-land ownership units in the United States. Regional and subregional breakdowns are included for such important variables as form of ownership; owner's occupation, age, sex, race, residence, and education; and size class of ownership.

Policymakers will find this information of value in evaluating programs; scientists will use it in research; forest industry will use it to forecast timber availability; and the general public will be better able to understand this diverse group of resource managers.

All information on the estimates of the different variables of forest-land owners are presented in tables.

Single copies of this 61-page paper (Forest Service Resource Bulletin WO-1) are available from the U.S. Department of Agriculture, Forest Service, P.O. Box 2417, Washington, D.C. 20013.

State of the Environment 1982

by The Conservation Foundation

This 439-page report is almost entirely the product of the Foundation's own interdisciplinary staff of economists, scientists, lawyers, political scientists, writers, and federal program specialists. It examines environmental conditions and trends, the status of natural resources, and scientific, legal, and other issues.

The major divisions of this book are: underlying trends, air quality, water resources, hazardous wastes, energy, agriculture and forestry, land, the urban environment, and the present administration and institutional change. Included throughout the report are many graphs, charts, and maps to further illustrate the information.

Copies of this report are available for $15 plus shipping and handling, from The Conservation Foundation, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Recent Soil Surveys Published

by the Soil Conservation Service

Arkansas: Stone County.
California: San Luis Obispo County.
Colorado: Huerfano County Area.
Connecticut: New London County.
Federated States of Micronesia: Islands of Truk, Island of Kosrae, and Islands of Yap.
Florida: Manatee County.
Georgia: Muscogee County and Tift County.
Iowa: Des Moines County, Johnson County, and Kossuth County.
Kansas: McPherson County.
Kentucky: Boyle and Mercer Counties and Carter County.
Michigan: St. Joseph County.
Minnesota: Dakota County.
Mississippi: Lauderdale County.
Missouri: Clinton County.
Nebraska: Holt County.
North Carolina: Wilson County.
Ohio: Carroll County.
Republic of Palau: Islands of Palau.
Washington: Snohomish County.
Wyoming: Crook County.

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